

MATH 331-1, Basic Real Analysis

Spring 2006

Instructor Info

Instructor: Ismar Volic
Meeting times: Mondays and Wednesdays 5:00 – 6:15, in CLK 101
Office hours: Tuesdays 2-3, Wednesdays 1-2, and by appointment, in Kerchof 327
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Textbook and Webpage

Text: *Understanding Analysis*, by S. Abbott, Springer, 2001.
This is the main, required textbook.
Foundations of Mathematical Analysis, by R. Johnsonbaugh and W. Pfaffenberger, Dover, 2002.
This book is not required, but it is very good and cheap, so it makes for a nice supplementary source.

Webpage: https://toolkit.itc.virginia.edu:443/cgi-local/tk/UVa_CLAS_2006_Spring_MATH331-1
Please check this page often. It will contain various important announcements and information about the course. You can also join discussion groups, provide feedback about the course, etc.

Prerequisites and Policies

Prerequisites: Two semesters of calculus.

Attendance: It is not required that you come to class, although it is doubtful that you will do well in the course if you miss too many lectures. If you do decide to attend, *please be on time*.

Makeup exams: Makeup exams will not be given except in emergencies. If you miss an exam, we will arrange a makeup only if you are able to present a note from a doctor or a school official stating that you were not able to take the exam at the scheduled time.

Course Outline

We will hopefully cover most of the material through section 7.5, and will probably do so in the same order as presented in the book. This course is a rigorous study of the real numbers and real-valued functions, leading to the reworking of the material from first and second-semester calculus in a rigorous setting. The central theme is going to be the concept of infinity, which we will have to think about very hard in various contexts. The main topics will be real numbers, completeness, limits, sequences, convergence, differentiability, and integrability. In many ways, the real purpose of this course is for you to develop proof-writing techniques and an appreciation for reading and understanding a rigorous proof. This can be challenging, so it is very important for you to keep up with the assigned work and understand the material covered in lectures.

Assignments, Exams, and Grading

Homework: Homework will be assigned weekly and collected every Wednesday. You will be graded on the content, but also in large part on clarity and presentation. You will be expected to follow the guidelines from the document *HWguidelines.pdf* which can be found on Toolkit's "Materials" page. It is very important that you keep up with the assigned work since the exams will be based on the homework problems. Feel free to work on the homework assignments together, but write them up individually. Late homework will not be accepted.

Exams: There will be one in-class midterm and a final. Date of the midterm will be announced later. Final will be given on the last day of class (May 1).

Grading: 50% homework
25% midterm
25% final

Important Dates

Wednesday, January 18	First day of class
Wednesday, February 1	Last day to drop
Friday, February 3	Last day to add
Monday, March 6 – Friday, March 10	No classes (spring break)
Wednesday, March 15	Last day to withdraw
Monday, May 1	Last class, final exam (in class)